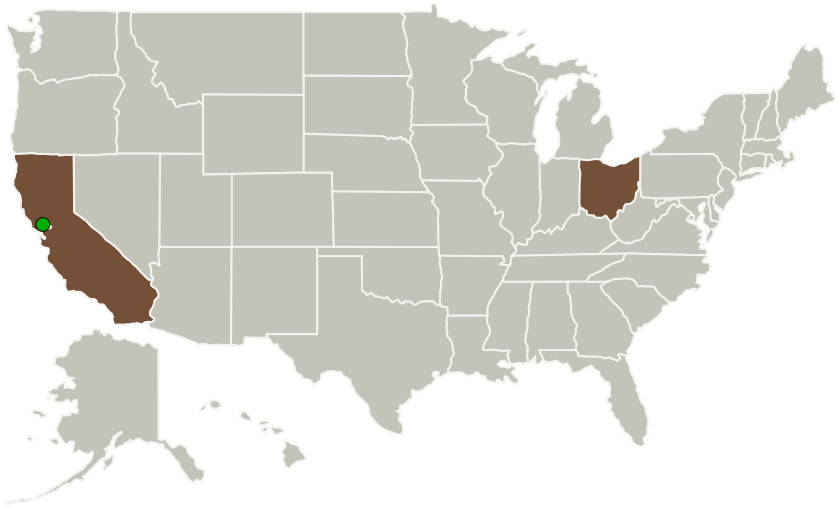
Electrically Activated Shape Memory Polymer for Smallsat Components, Phase I

Completed Technology Project (2017 - 2017)

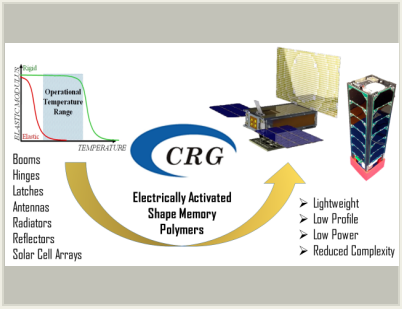
Project Introduction

CRG proposes to advance smallsat and cubesat deployable components enabling CRG's electrically activated shape memory polymer (EASMP) to transition a rigid component with characteristics representing a thermoset into lower modulus state as an elastomer for flexibility. This switch will be capable with a single momentary electrical activation. This bi-stable solution will allow for a lightweight, compact, and controlled solution of deployment for multiple smallsat components such as latches, hinges, reflectors, booms, etc. This technology will not be limited by mission size or application, it is capable of scalability for a large range of applications.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Cornerstone Research Group, Inc.	Lead Organization	Industry	Miamisburg, Ohio
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California



Electrically Activated Shape Memory Polymer for Smallsat Components, Phase I Briefing Chart Image

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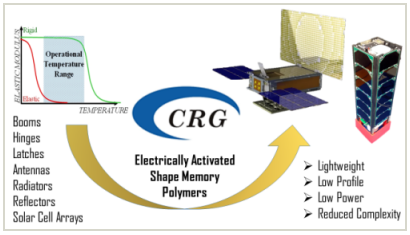
Primary U.S. Work Locations	
California	Ohio

Images



Briefing Chart Image
Electrically Activated Shape Memory Polymer for Smallsat Components, Phase I Briefing Chart Image
(https://techport.nasa.gov/image/134789)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Cornerstone Research Group, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

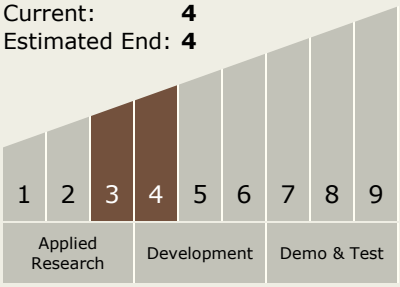
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Jason Hermiller

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.3 Mechanical Systems
    - TX12.3.2 Electro-Mechanical, Mechanical, and Micromechanisms

Target Destinations

Earth, The Moon, Others Inside the Solar System, Outside the Solar System, The Sun, Mars